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Combat Crew

strategic air command

★★★★ MARCH 1982

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Combat Crew

Magazine of the Strategic Air Command - 32nd Year of Publication

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Air Refueling Photo Provided By

940th AREFG

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DEPARTMENT OF THE AIR FORCE

Lt General George D. Miller
Vice Commander in Chief, SAC

The topics, leadership, discipline and motivation, have been addressed by philosophers, statesmen and military leaders for centuries. Unfortunately, some people treat these topics as purely academic and for some reason do not associate them with what they do daily in their current assignments. I would like to give you my opinion of how these topics relate to what affects many of you directly — our combat crew training program.

The SAC training program is dynamic — it is constantly evaluated and modified to meet the changing threats posed by potential adversaries. Since experience has proven that we will fight tomorrow the way we train today, we need to respond to these necessary changes in our training with the positive leadership, self-discipline and motivation that will sustain our proficiency through a quality training program.

LEADERSHIP

Leadership can be defined as "a function of command to provide sound concepts of action and inspire others to carry out a mission with energy and spirit." I would add emphasis to the part "carry out a mission" — in other words, good leadership insures the mission is accomplished. Good leadership is always present in a crew force which has a quality training program. At the unit level, commanders and supervisors work to understand the objectives of the program, allocate proper resources, and insure the training is adequate to keep crewmembers proficient. Key supervisors are actively involved in all facets of training including scheduling, mission preparation and flying.

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TRAINING FOR DETERRENCE

This active involvement provides supervisors direct feedback on the effectiveness of the program and an opportunity to gain firsthand knowledge about crewmembers' proficiency, attitudes and perceptions about the quality of the training. They can then apply their leadership skills to adjust the training to be sure the objectives are achieved. Naturally, I include aircraft and crew commanders and each crewmember as leaders, regardless of the number of people under their direct supervision. Good leadership, however, is only the beginning. It must be reinforced and supported by a disciplined, mature crew force.

DISCIPLINE

Discipline can be defined as ". . . the will that compels a person to recognize and accept his responsibilities."

I am not referring to discipline in the punitive sense, but in terms of the self-discipline and accountability maintained by individual crewmembers. As a crewmember, you have the final responsibility for mission accomplishment. You integrate the training objectives, equipment, environment and guidance of your leaders into a final product that relates to combat readiness. This product is naturally more difficult to produce when the training tactics become more realistic. However, if you discipline yourself to concentrate on basic maneuvers, skills and procedures to the point that they are mastered, and I mean really mastered, you will be prepared to produce when it really counts.

The SAC night terrain avoidance (TA) training program, for example, was developed to counter changes in the threat posed by our potential adversaries. Your initial responses varied from enthusiastic to genuine concern about the risks involved.

I, too, am concerned about the risks associated with night TA. Efforts are underway to minimize known risks through equipment and procedures changes. However, you are the key to making TA safe. Discipline yourselves to concentrate on basic TA procedures, TA equipment operation and training objectives each time you fly. As you gain experience, you should be able to fly TA altitudes consistent with our training objectives. In the interim, you have to exhibit the self-discipline and maturity to fly altitudes consistent with your ability, TA equipment capability and the environment. Remember, our objective is to enhance our combat capability without unnecessary risks — I repeat, without unnecessary risks.

MOTIVATION

Generally, motivation refers to the inspiration, drive or will that prompts a person to achieve certain goals or objectives. In our training program, the goals and objectives are defined at the headquarters level. We depend on the units and individual crewmembers to respond with the necessary motivation to achieve them.

I will not attempt to define the many sources of motivation that drive the SAC crew force. Each of you has his or her reasons for choosing to be a crewmember. However, I do submit that, to varying degrees, each of you are motivated to accomplish the mission. This motivation is reflected in the way you perform your duties and is a part of your professional reputation. The highly motivated crewmember is eager to accept challenges and respond to changes in our training program with a positive attitude.

I do not expect crewmembers to accept tasks and changes which you perceive to be too risky. However, I do expect you to discuss your perceptions with your peers, supervisors and commanders. This will provide feedback to your leaders and, simultaneously, provide you some insight into why other crewmembers have different perceptions. In many cases, the answer relates to motivation — the motivation to lead, learn and discipline yourself to accomplish the mission.

I have observed many changes in the SAC mission and the training programs designed to prepare the crew force to accomplish those missions. You have responded to these changes with the leadersip, discipline and motivation that characterize a professional fighting force. As a result, SAC has fulfilled its mission of providing strategic deterrence throughout its history. I am proud to be a part of this tradition of excellence and am confident that you, as professional crewmembers, will continue to support and maintain our high level of readiness. Because of your efforts, we have built a professional fighting force no adversary has dared to challenge. That is the real mission of deterrence.★★★

940th AREFG

Maj Gene Lock
940th AREFG (AFRES)
Mather AFB

It was the kind of news that aspirin stock investors like to hear: move your Air Force Reserve unit to a new base and along the way, trade in your C-130 MAC mission aircraft and await delivery of eight not-so-new KC-135s. Learn to maintain and fly them and then get into the SAC alert business! All of this happened relatively smoothly in 1977-78 for 800 members of the 940th Air Refueling Group, now at Mather AFB, California.

A quick glance at this issue's Hall of Fame on the back cover indicates this unit is still going strong: 87,000 plus safe flying hours and over 22 years of mishap-free flying.

On a recent morning, the 940th alert flight crew gave their bird its customary onceover — it could have been a promo for TV's "What's My Line." Tomorrow, the AC would be back studying medicine. The other three cockpit crewmembers would be earning a living as an electrical engineer, a school teacher, and an aircraft scheduler.

It's not an unusual scenario: 80% of the unit is made up of part-time reservists. The remaining 20%, about 165, are reserve technicians, instructors, schedulers, CBPO specialists and maintenance specialists necessary to keep the unit operational on its day-to-day schedule, by readying aircraft and paperwork for the reservists who fly and train throughout the month.

In addition to the unit's alert mission, 940th tankers routinely refuel and fly daily, much like their counterparts on active duty. Mather's 320th Bomb Wing, and its 904th Refueling Squadron are the 940th's active duty neighbors at Mather.

The 940th Air Refueling Group is one of three reserve air refueling squadrons in AFRES. Besides Mather, they're found at March AFB, and at Grissom in Indiana. All three are part of the 452nd Air Refueling Wing (Reserve) headquartered at March and commanded by Colonel William B. McDaniel.

The 940th's transition to the propless Air Force went smoothly, and much of the success is attributed to the help the reservists got from SAC and the 320th Bomb Wing. The unit is an old hand at mission conversions — their history includes F-84s, C-46s, C-119s, C-124s and C-130s. But refueling and SAC was brand new.

When the first 940th tanker arrived at Mather, it was waved into its parking spot by fully-qualified 940th KC-135 specialists. They came early and working with the 320th personnel and the FTD troops they learned the new systems for their own soon-to-arrive tankers. As the C-130s phased out at their old base (McClellan) more 940th maintenance personnel came to Mather to get ready for the new aircraft by gaining OJT on the active duty's flight line and in the 320th BMW shops.

The cooperation is even closer now. The two units work out of the same job control. "So we don't have to actually ask for help on a problem . . . they're right there when the call comes in . . . they hear about it as soon as we do", states the 940th's chief of maintenance, Major Herum Bjork.

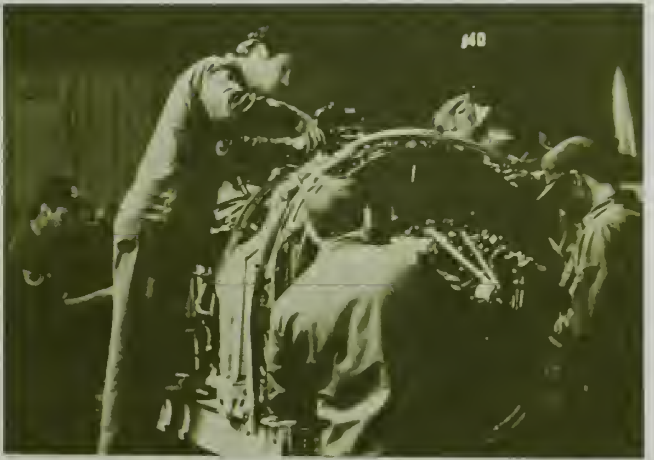
Because reserve units do enjoy a high degree of experience in their maintenance fields, the 940th can help trouble shoot problems on the active side of job control as well, says Bjork.

On the flying side, SAC instructor crews and a full-time SAC advisor helped make the cockpit transition an early success, says 940th DO Lt. Col. Terry Whitnell.

The 940th put its first aircraft on SAC alert on January 1, 1978. What makes the SAC tanker mission and the reserve concept work well together? In four words, it's experience, stability, pride and cooperation. The words come from Col. Robert Q. Head, 940th Commander; from the Safety Chief, Lt. Col. Art Crane, from Major Bjork of Maintenance, and from Major Pete Sullivan of Stan. Eval.

The same words are what makes the group's AFRES-tagged tanker tails a welcome addition to the RAF Mildenhall, England, ramp each year. The 940th, and its sister units at March and Grissom, each take two week stints with four aircraft at RAF Mildenhall, prime refueling base for USAFE activities. This fall will be the 940th's fourth trip to the English base. Altogether about 150 crewmembers, maintenance personnel, security police, cooks, fuels specialists and more, are asked back each year.

Like the news of converting a reserve unit to KC-135s, this wholesale overseas deployment was a new thing back in 1979. Now it's looked forward to by both the reservists and the active duty staff at the base. "We appreciate the training and the trip, and the base appreciates having experienced, qualified individuals to help out during their heaviest refueling season," says Col. Head.



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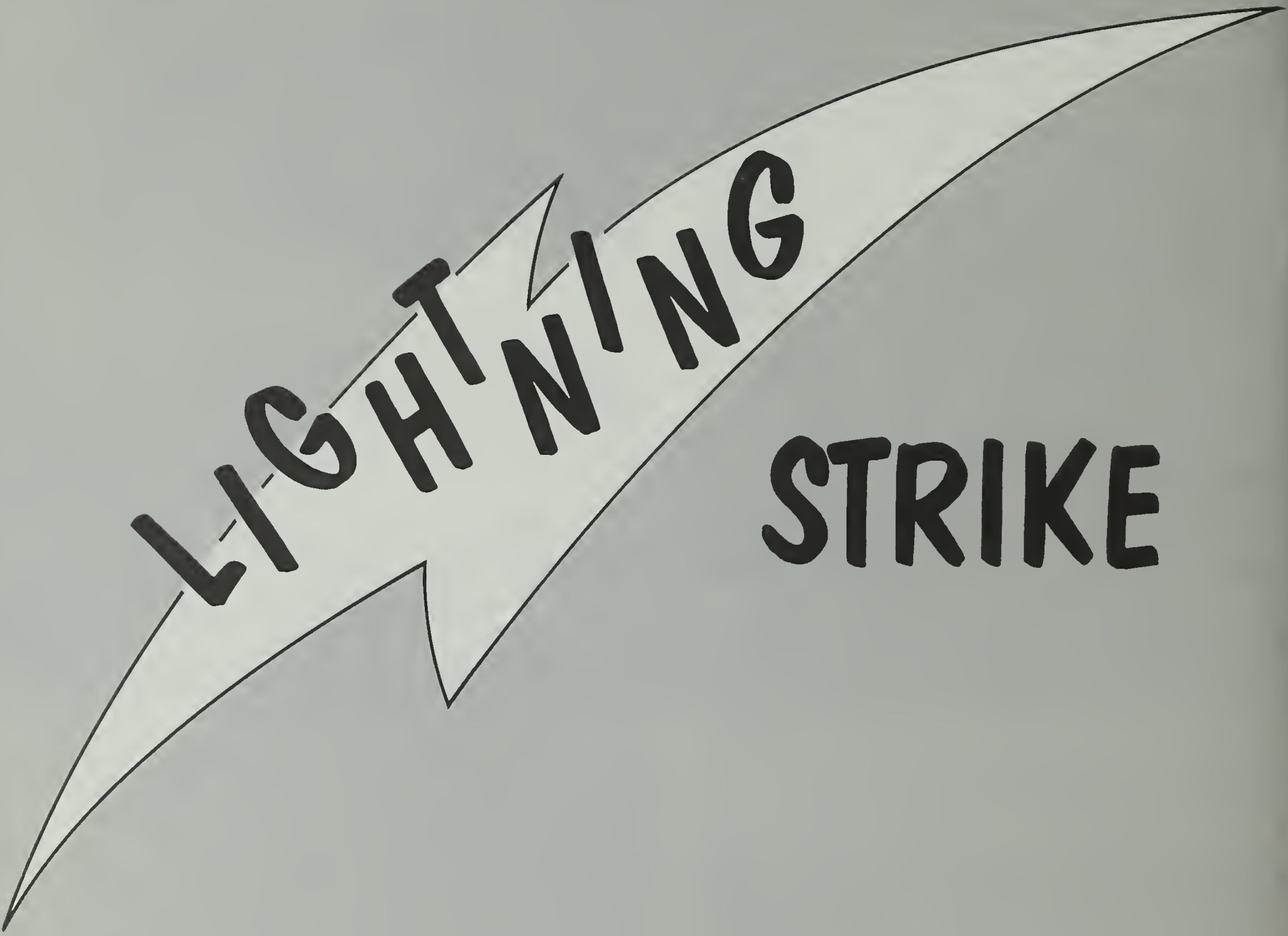
LIGHTNING STRIKE



Captain Robert N. Hess
Seymour Johnson AFB

SAC provides a diversification program which allows it's crew members the opportunity to visit other SAC bases to accomplish training unavailable in their own local area. On a return mission from one of these exercises my crew experienced an incident, that we will all remember for a long time. This incident brought us one foot from disaster.

We were flying in a B-52G. The crew consisted of; the pilot, Capt Danny Rouse; the copilot, Capt Dave Sarver; radar navigator, Capt Robert Hess; navigator, Capt George Walker; electronic warfare officer, 1Lt Ray Sonoda; gunner, TSgt Al Abaya; safety observer, Maj Pete Jacobson an instructor radar navigator. Prior to our return flight we were briefed by the Base Weather Shop. This briefing revealed cold fronts to the east and west of our low-level route, but nothing that would affect the more critical phases of our flight. We discussed the mission and proceeded to the aircraft. This night mission went on uneventfully through the entry into our planned low-level route. We accomplished air refueling, low-level entry checklists and got a normal weather update indicating no hazardous weather for the low level route.

It was noted that the low level route had reports of thunderstorms one hour prior to the incident, and the controlling agency had not received that information until after the lightning strike. We hope that this incident will re-emphasize the importance of getting low level weather information to the controlling agency so they can make more timely decisions concerning low level route closure.

Our experience should give further evidence to the vulnerable position crew members and aircraft are in when flying low level training missions. Thunderstorms are difficult to identify on radar when flying low level due to radar attenuation, mountain shadows and range limitations. Hopefully increased awareness of these problems will result in faster passage of low level weather information to controlling agencies, so they can make timely decisions on route closure. I also hope that all of us try to see and avoid that unsafe condition that could result in a lightning strike.

We were scheduled to fly the STRC, a long mountainous low-level route involving four bomb sites, and over three hours of low-level flight. On the entry leg going into low level we found ourselves in IFR conditions. This meant we could not fly our preferred terrain avoidance altitudes. The mission continued until just prior to the first bomb run, when we heard an aircraft report thunderstorms at a location just past the end maneuver area of the third bomb run. After accomplishing the second bomb run, we heard a second bomber abort the low level route for thunderstorms at the same location the first aircraft had aborted. The route was not closed so we decided to continue our mission with increased care. As we entered our third bomb run we knew we would be looking for the weather the previous aircraft had aborted for, immediately following the release on our final target. We continued south toward a mountain range that climbed three thousand feet above the surrounding terrain. The copilot noticed we were within 3°C of the freezing level and stated that, while we were not in the clouds, due to the dense overcast night conditions (it was too dark to see) we should be on the lookout for weather. The radar navigator changed the mode of operation of the radar and began an extensive search for thunderstorms, changing ranges, tilt settings and frequencies, to discover only the whispy remnants of rain showers in the area of the three thousand foot ridge ahead. We experienced none of the normal warnings that come when aircraft pass in the proximity of thunderstorms. There was no static on the radio, no rain visible, no St Elmo's Fire and we experienced no exceptional buffeting or turbulence. Nothing to alert us to what was soon to happen, so we elected to continue our mission. We climbed to our next planned altitude and proceeded through the whispy returns observed earlier on radar. We still experienced no signs of severe weather. The safety observer stated he noticed a glow on the radome of the aircraft. The copilot noticed some lightning above, when a bolt of lightning struck the radome just below the pilot's window. He reported that it appeared as a fireball approximately three feet in diameter. It blinded both pilots and the safety observer for approximately five to ten seconds. The plane lurched and vibrated violently as we continued ahead. A slight climb was initiated and we decided to abort as soon as we cleared the area so we would not fly through anymore thunderstorm effects. We squawked emergency and climbed ahead and to the left, out of the route. The electronic warfare officer called center and SAC advising them of the problem.

On the way home we checked out all systems carefully, to ascertain the damage done by the lightning strike. We found the only damage we could identify was a difference in the compass reading at the pilot's station, and the readings in the rest of the aircraft. We deviated to avoid thunderstorms on the return home with no difficulty and had an uneventful landing. During the taxi back, an inspection of the aircraft revealed the first part of the damage. It was discovered that there were no signs of thunderstorms fiberglass wingtip trailing edge had been blown off the aircraft by the lightning bolt as it exited the aircraft. The lightning bolt had run down the fuselage of the aircraft to the wing struts and split into two parts, one exiting left the other exiting right.

Later the ground crew found the damage done to the right wing. The right wing damage included three char marks about one foot aft of the number three main fuel tank and two feet from the fuselage; a six inch circle with a three inch skin crack; a three inch circle with a half inch crack; and a one inch crack around a rivet where the lightning exited the aircraft. If the lightning had departed the aircraft just one foot forward, the aircraft and aircrew would have been lost due to explosion of fuel vapors in the number three tank. During the investigation it was discovered that there were so signs of thunderstorms in the area prior to our entry. The probability for lightning was high. Even so, in the final analysis there was only a two tenths of a percent chance for any aircraft to be struck by lightning that night.

FLY THE AIRCRAFT

Flying an aircraft in the early morning hours on a low-level bomb run is one of the most demanding tasks required of SAC combat crews. In addition to the technical and intellectual aspects, there also exists a significant but frequently forgotten physiological aspect of this mission.

Circadian rhythm is the tendency for biological activities to occur at regular intervals over approximately a 24-hour period. Human performance also has a circadian rhythm. Under conditions of a normal sleep-wake cycle, human performance reaches its maximum during the afternoon (1200-2100 hours) and its minimum in the early morning (0300-0600 hours). Night flying operations obviously conflict with the crewmember's circadian rhythm. Humans possess physiological reserves that can be mobilized during the low points of circadian rhythm. However, mobilization of this reserve capacity by crewmembers must be a conscious activity based upon their awareness that their performance will naturally slip during the early morning hours.

Other stresses, most frequently fatigue, cause further decrements in performance. Fatigue is the progressive decrement in performance efficiency due to prolonged activity, strenuous activity, or sleep deprivation. Activity may be physical or mental.

Sleep deprivation, which is reflected usually as inadequate or poor quality sleep the night before a mission, is an insidious stressor.

Among the tasks most sensitive to sleep deprivation are visual or auditory vigilance tasks, reaction time tasks, and memory tasks. Experimental studies have demonstrated that the fatigue of sleep deprivation leads to a narrowing of attention and a decrement in short-term memory that can allow an occasional gross error to arise when the crewmember is distracted.

Because we cannot eliminate mission requirements for night low-level flying, SAC aircrews must cope with the problems of circadian rhythm disruption and fatigue through awareness and prudent use of AFR 60-1 crew provisions. Commanders must also consider these factors in planning and scheduling flight operations and shift work schedules. — Hq SAC Surgeon General

Capt William E. Gormley
416 BMW, Griffiss AFB

The incident in this article is not a fictional reconstruction of a recent SAC aircraft mishap, it really happened. In early 1981 this incident took place on a training sortie on which I was a crewmember.

The time is early morning, the place is IR-501, La Junta North, our B52 is just past the low level bomb run initial point, listen to the interphone conversation.

Radar Navigator (RN): Crew standby for the TIP (timing initiation point) . . . ready . . . ready . . . NOW!

RN: Pilot, I have the ETP (emergency timing point), give me thirty left for course correction.

Pilot: Roger, coming thirty left.

The aircraft turns left 45 degrees and continues to turn.

RN: Pilot, Radar, where are we going?

Pilot: My HSI (a heading reference instrument) is frozen. I'm rolling out.

Instructor Pilot (IP): Is the DG (directional gyro) okay?

Pilot: Yeah, its working.

Navigator: Pilot, turn right to heading 170.

Pilot: Roger, turning right to 170 on my DG.

IP: Pilot, aren't we low on airspeed?

Pilot: Yeah, I just noticed it, coming back up.

Copilot: Pilot, my radar altimeter shows 100 feet.

A recipe for disaster? Maybe, but this time the crew recovered safely and completed the mission. But how did they get into this situation, and how did they get out of it, and why did they get out of it?

First let's look at the crew. The pilot team had an instructor pilot in the left seat, another instructor pilot in the IP seat, and a new copilot in the right seat. Downstairs the nav team had an instructor radar navigator in the left seat (me) and an instructor navigator in the right seat. A reasonably experienced flight crew overall, so a lack of experience doesn't seem to be a contributing factor.

How about the situation? Late at night, actually early in the morning, about 0100 by the crew's "body clocks". The weather was clear, a starry night with no moon. The bomb run was an offset fixed angle run, which requires a somewhat higher degree of crew coordination than a normal synchronous run. And finally the unexpected complicating factor, the pilot's frozen heading instrument, the HSI.

Fatigue played a part in the development of this situation. Home station is an eastern base, a flight of several hours from there to the low level route, and a night flight at that. The day before was spent mission planning, so that day was more-or-less a "normal" work day for the crew. The change insured their "body clocks" would be out of sync with the flight.

How about the weather? Pretty good for night terrain avoidance (TA) flying, except no moon. Not much light to see the unlit flat terrain coming up.

Now, what about the flight activity? The route was flown with all systems working and the first bomb run was a synchronous run, flown at TA altitudes with no problems. The racetrack bomb run, also synchronous, was flown at IFR altitude for a route restriction, once again, no problems. But the bomb run we are concerned with was an alternate bomb run relying on the radar navigator to find an ETP, line the aircraft up by giving the pilot turns, and get timing information from the offset to effect a release. The pilot must hold heading and airspeed as constant as possible to insure the accuracy of the azimuth and timing to release. The copilot is map-reading as best he can at night, and generally keeping his eyes outside the cockpit. The navigator meanwhile is monitoring drift information to update heading, and groundspeed information to update time to release from the timing points. All this information is passed between crewmembers over the interphone throughout the run to insure an accurate release. The need for crew coordination here is obvious, and it comes to loom larger in the priorities of these men during the alternate run.

Finally the unexpected factor that started the whole chain of events, which incidently lasted only about 60 seconds from start to finish. The pilot started his turn with a normal bank angle and watched for the heading change to be reflected on his HSI. The nav team watched the turn on their radarscopes and the N-1 compass, and noticing the size of the turn, brought it to the attention of the pilot. At this point four, and perhaps five, crewmembers are trying to decide what is wrong and what to do about it. They are distracted to some extent from their normal jobs, which include, FLYING THE AIRCRAFT.

While the heading problem is identified, and a solution found and implemented, the airspeed drops off. Keep in mind this whole sequence of events takes place in less than 60 seconds. The IP notices the change in the indicated airspeed on the EVS monitors, which are also at both nav team stations, and informs the pilot. The power comes in, and the airspeed starts to return to the preplanned TAS. Seconds later the copilot, who is now crosschecking his flight instruments, announces the radar altimeter reading to the crew.

Continued on Page 23

BIG "I"

THE VERY BEST
(I am . . . I think . . . I was)

Captain Rhett T. Cooper
1st Combat Evaluation Group
Barksdale AFB, Louisiana

There comes a time in the life of pilots when they begin to feel very confident flying our mission. Hard study, diligent work, and experience have paid off . . . we've mastered the air machine. In so many words, we have the "bull by the horns." Why is it then that little things keep popping up that detract from overall mission effectiveness? A lack of proficiency is one problem that may or may not be quickly cured. However, a lack of job knowledge is often the culprit that becomes the old albatross around our necks. Perhaps an easier way to view this problem is to look at that average pilot team at Good Nature AFB.

Major Error and Captain Blunder are pilots with combined operational flying hours in excess of 3,500. They have been a hard crew for over two years and until recently were more or less "hand selected" to fly the tough mission. Why are they no longer that solid pilot team everyone used to call the best? Read further . . .

On a recent DV flight, things were going extremely well at all crew positions. Weather clear, air smooth, and dead on schedule. The initial stop was at Dudley International, a small civilian field. A quick stop to pick up the passengers and grab 65,000 pounds of fuel. After "follow-me" had parked the aircraft, Major Error informed the ground crew of fuel requirements. Very politely Major Error was informed that JP-4 would not be available to military users for 60 days since the main storage fuel tanks were being repaired. Well, to make a long story short, the DV's were boarded and an on-time takeoff accomplished. Unfortunately, an intermediate stop was required for fuel and a late arrival at final destination resulted. What was the problem? Certainly not with Dudley International. The fact that JP-4 fuel for military aircraft was not available had been properly NOTAMed. Why didn't Captain Blunder see the NOTAM at base ops earlier that day? Simple. Civil NOTAMs are only available through FAA Flight Service Stations. Guess Major Error should have checked with FAA Flight service for en route and civil airport NOTAMs. But anyone could have made this little mistake. Checking Flight Service for civil airport NOTAMs is seldom required and is a little known fact. As Major Error said when explaining the confusion to the commander, "I don't think it says anywhere how you check NOTAMs at a civil airport." A weak excuse.

That was the most recent unfortunate event that occurred to Major Error and Captain Blunder. Some of the guys remember when Major Error was flying the ILS RW 1 approach to a full stop and the glide slope warning flag came into view about 3 miles out on final. It just so happened the ceiling was 200′, ½ mile visibility and 2400 ft RVR. Yes, this was to be a real weather approach and landing. The crew, realizing no one had started timing for the localizer when notified by GCA the aircraft was at the FAF or had asked for radar monitoring, executed the missed approach. As luck would have it, the field RVR dropped to 1800 feet and aircraft fuel status was such that a weather divert had to be accomplished. No big deal. Where does it say we need to consider a back-up approach? Guess it's just common sense to use every aid available to the pilot when flying airplanes. Anyway, the commander was understanding even though this little fiasco cost time, money, and required an alert substitution because Major Error and crew were not able to land at the home drome until the next day. How easy to have briefed and used that back-up approach.

It was right after this incident that Major Error's crew lost their "select" status and received an "E" designator. Additionally, for whatever reason, Major Error and Captain Blunder were the recipients of a no-notice inflight evaluation even though both pilots had just completed their annual checks a couple of months prior. As Major Error told Captain Blunder, "The boys in standboard have to get their quota and we were the only crew available." Makes you wonder if that was the only reason for the no-notice considering Major Error's and Captain Blunder's track records.

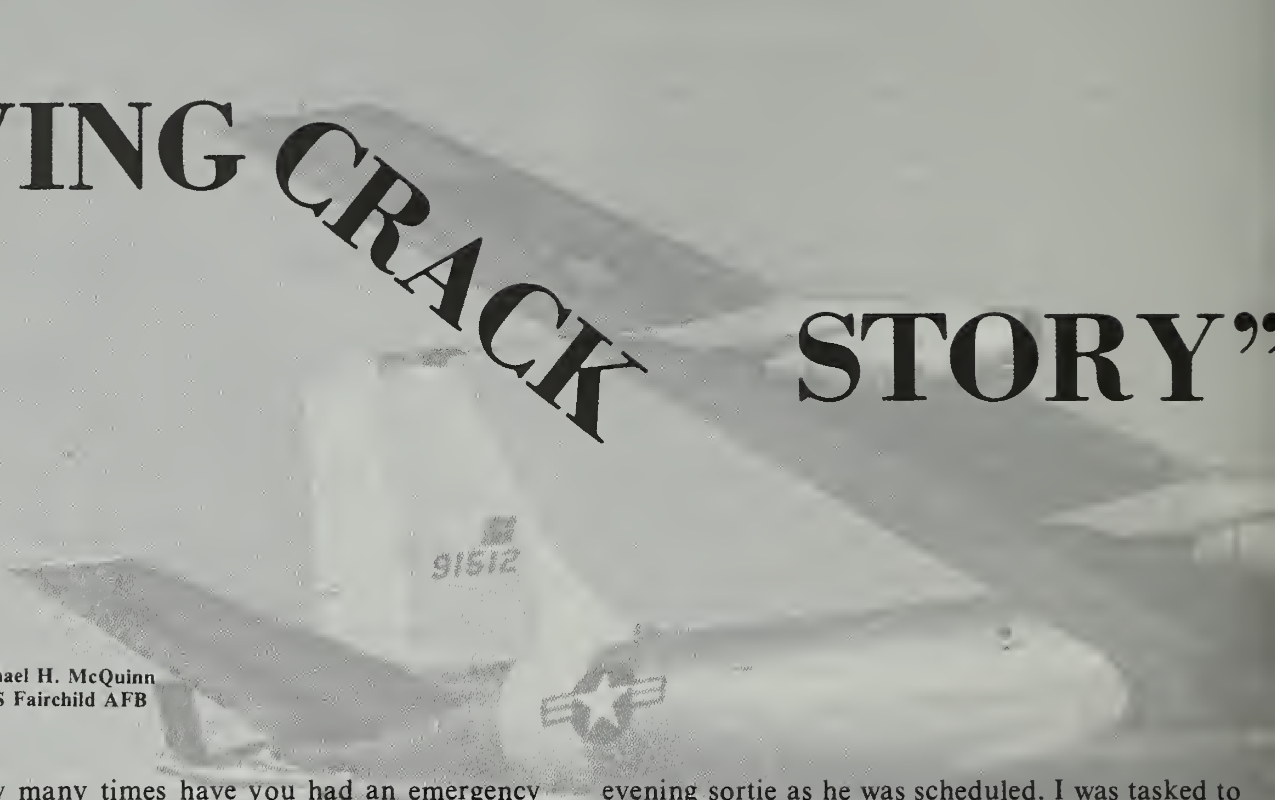
One may conclude this pilot team needs help. Where would you suggest they start to improve on their abilities? Before you answer the question, let's look at one more happening in the continuing saga of Major Error and Captain Blunder.

It was early one morning after an all night mission when this pilot team was preparing to full stop. The sun was just coming over the horizon and the airfield was covered with a slight haze. At decision height, Major Error said he had the field in sight and was going to land. Captain Blunder quickly pointed out to Major Error the aircraft was slightly high on slide slope. Captain Blunder suggested an immediate power reduction in order to recapture the ILS glide slope. Major Error made one abrupt power and pitch change in an effort to bring the normal touchdown point into his visual cues. As advertised, a high sink rate ensued with an accompanying thrust/lift problem during this critical phase of flight. Full power was applied and touchdown accomplished just inside the runway threshold. No one will ever know for sure how the "old man" got wind of this one, but he did. Major Error and Captain Blunder agreed with the commander, during a closed door session, that those so-called "duck-under maneuvers" must be avoided during a low visibility approach. Additionally, it was pointed out that, under limited visibility conditions, the aircraft's projected runway contact point may not be within the pilot's visual segment until considerably below published minimums even though the airfield and runway were highly visible at decision height. As might be expected, Major Error and Captain Blunder later decided this was just another rough sortie and their luck should improve.

Well, luck doesn't fly airplanes. Only highly trained, dedicated and professional pilots do that. How can Major Error and Captain Blunder improve their record? If you said, "Get back to the basics," you're absolutely right. The basics here simply are a review of AFM 51-37, **Instrument Flying.** The stories you have just read are true, at least in part. No, there's not a Major Error or Captain Blunder pilot team, but the mistakes these bogus individuals made have happened and will occur again. It is sad to say these mistakes could have been avoided if the pilot knew and applied the principles in the appropriate directives.

Two lessons we can learn here. First, we must never think we've completely mastered the air machine. It will prove us wrong. Without hard practice to develop that good crosscheck, we'll find ourselves on the short end of the stick where no amount of luck can save the day. Second, never believe you have those regulations, such as AFM 51-37, totally put to memory. How easy we can forget those need-to-know bits of information that make flying the aircraft much easier and, for sure, a lot safer. It may be hard to conceive or even suspect we are falling into the mold of Major Error or Captain Blunder, but accept the fact! Then get some help . . . and start with a large dose of self-help. Dig out those books and go to work. Relearn and review important sections periodically. After all, we are professional pilots and should settle only for a top-notch performance.

"THE WING CRACK STORY"



Capt Michael H. McQuinn
92 AREFS Fairchild AFB

How many times have you had an emergency that in any way resembled what you have seen in the simulator or the way it was described in the Dash 1? It seems that emergencies are always somewhat different than advertised. This further emphasizes that no matter how much they attempt to amplify our tech orders, every possible case can never be fully covered. For this reason alone, it is important that we as crew members make a concerted effort to wisely manage our idle alert time. We should effectively utilize our training resources to develop a thorough knowledge of how the aircraft operates and a plan of action in the event we have a serious in-flight emergency.

The following is an actual case that happened to me and the crew I was flying with in mid April 1980 at Fairchild Air Force Base. This narrative is given to allow you as a spectator to analyze the crew actions and determine if your plan of action would have been any different.

It was a Monday morning when I arrived at work with a phone call waiting from scheduling saying that the chief of Stan/Eval was needed to fly an evaluation the following morning. Due to crew rest turn time, he was not going to be able to fly the evening sortie as he was scheduled. I was tasked to find a stan/eval pilot to fly with his crew. After a quick look at the mission profile, I decided to take the sortie myself. It was an easy flight to prepare for with only an air refueling and return for a full stop landing. The mission duration was scheduled as two hours and forty minutes. The air refueling was to be with a local B-52 with an offload of 70 thousand pounds. All in all, it seemed as if you could do this one "standing up". I made the necessary calls and returned home to change into a flight suit. I met the crew at the normal bus time and made a thorough review of the mission profile with the crew at base ops. The weather briefing was very familiar for the season of year at Fairchild; layered clouds and some light turbulence forecasted through part of the route.

We went through the preflight with only minor TACAN problems and made an on time takeoff at 1710 local. The planned route and airspeeds were followed. Upon reaching the A/R area, we were greeted with layered decks of clouds at the planned refueling altitudes. With coordination from center and the receiver pilot, we raised the block to FL290-330 using 310 as the base air refueling altitude. The

rendezvous was completed in VMC and as we rolled out on the refueling heading 3NM ahead of the bomber, the receiver pilot reported that we had a single contrail coming from our aircraft. At this time the boom operator was completing his boom controllability check, and I remember rationalizing in mind that somehow he could be creating this phenomena with the position of the boom at this altitude. The boomer reported soon after that he also saw the contrail during the turn and had thought it was from the engines. As the receiver closed, he continued to describe the contrail. As he reached about 200 feet, he was able to determine that it was liquid coming from the left wing inboard of the number 2 engine. Well, that got our attention. A quick wing scan was ordered from inside the airplane, and a scan of the fuel and hydraulic quantity indicators was made. Hydraulics were normal. However, a 1,000 pound fuel imbalance was noted between the number 2 and 3 fuel quantity gauges. This is not an unheard of situation, and at this point, a leak was not obvious without the external visual confirmation. The bomber closed to approximately fifty to seventyfive feet, and we decided to terminate the air refueling. By monitoring the fuel gauge for the number 2 tank, we were able to rate the leak at approximately 200 to 300 pounds per minute. The dash one was referenced and the procedures outlined under fuel system leakage were followed. For once we were having a problem that was detailed in the tech order. We elected to shutdown the number two engine. The checklist for engine fire or failure in-flight was used following the shutdown of the number two engine to simply be sure that the generator was tripped out of the system and the fire switch was pulled to prevent the possiblity of fuel being spilled in the strut area around the engine. The number two Fuel Valve Fire Shutoff circuit breaker was then opened and the Fire Switch was reset. This allowed cooling hydraulics to be restored to the number two engine components. By the time this was completed, 15 to 20 minutes had elapsed from the initial call from the receiver pilot and there was a 3,000 pound fuel imbalance between the number two and three tanks.

We now noticed that all engines were at NRT power which pointed our next problem. Although the charts show that the absolute altitude for a 220.Om gross weight airplane is FL 320 with 3 engines operating at NRT; you can't maintain 255

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You Too Can H.Q.

1Lt Steven Roberts
533d SMS, McConnell AFB

In order to prepare for a standardization/evaluation (DOV) check with any hope of survival, let alone a Highly Qualified rating, a few misconceptions must be dispelled. Contrary to the belief of many line crew types, the STAN/EVAL personnel are not knuckle-dragging Neanderthals. I have yet to see a "Bucolic Buffalo" evaluator in the two years I have been in the missile business.

Another myth to be refuted is the idea that Stand/Board members are out to "get" you. This is not to say that they won't document a legitimate error when it occurs. They are, after all, evaluators. The shop was not formed as a vigilante squad by the wing commander just to make our lives miserable. Believe it or not, evaluators were once line crewmembers and most have not totally erased the feeling of being "under the gun."

Without a positive attitude it is unlikely, if not impossible, to contemplate a 5.0 or even a 4.7 score. When the crew attitude is negative, your rating will likely reflect that mood. Evaluators are really human, and their first impression of the crew can have an effect on the final score of the ride. A crew's attitude in the weeks ahead of a check governs their preparation. Incomplete EWO knowledge and uncoordinated crew procedures are totally unacceptable and a negative attitude will lead ultimately to a substandard performance.

While on complex, a crew must study governing regulations, complete all training packages and always run complete checklists without exceptions. You can't rip through a Daily Shift Verification and then sit back and expect a dynamite Stand/Board check.

All training packages, either EWO or weapon system, need to be accomplished as a crew. After all, coping with Missile Procedures Trainer problems or complex malfunctions and hazards is a crew effort. In regard to safety, there can be no short cuts or deviations. On the Missile Procedures Trainer all crewmembers must utilize their time to provide for maximum simulation. When the crew is on complex and a particular piece of safety equipment is required, USE IT. In the case of the hard hat, put it on. The one-time mistake or omission may leave a lasting impression. Yes, the pun was intended.

From our first introduction to the military, whether it's on the operations or maintenance side of the house, checklist discipline is continually stressed. The only way to achieve outstanding crew coordination is to follow the directions. It is easy to advocate checklist discipline, but sometimes difficult to achieve and maintain. We, as crewmembers, must talk to each other. Not just the words, but the ideas and concepts, too. Each member of the crew has their own field of expertise. Don't hide your light under a basket. You don't lose your knowledge when you share it.

The sharing of information not only reinforces it in your own mind, but serves to enhance crew coordination. All crewmembers then become aware of the timing required, as well as the necessary actions and expected results from those actions. If things don't go as expected, the entire crew can then help to immediately identify a problem or malfunction. The alert prior to your check is not the time to start running checklists and sharing wisdom. That is, unless you haven't been doing so already.

With proper preparation, confidence is easily gained. I'm not restricting confidence to each member either. I mean crew confidence. Each individual must be positive in his or her own mind and be confident of his or her own knowledge This, in turn, must be passed on to the rest of the crew. When all crewmembers are aware of each other and what contributes to a team effort, crew coordination results.

It is the responsibility of the crew commander to organize preparations for the check. This consists of making a list of goals and establishing a plan to achieve crew objectives and individual goals. Sit down as a crew and brainstorm ideas to see where you want to go.

Your first major objective should be to earn an H.Q. for all members of the crew. The next logical move is to obtain a job in one of the shops, either DOTI or DOV. From there the next transition is to a staff position for the officers, or maybe a transfer to maintenance for the enlisted technicians.

In order to reach these goals, the plan has five requirements. The first is the monthly completion of the EWO training package, to be followed by solution of the weapon system problems. The next requirement is pick a regulation and review it as it pertains to the crew force. The fourth item on the list is to establish time during each alert to accomplish these first three requirements. Last and perhaps the most important is to use a portion of one alert per month to review the plan and objectives to see if the desired results are being obtained. If they are not, find out why.

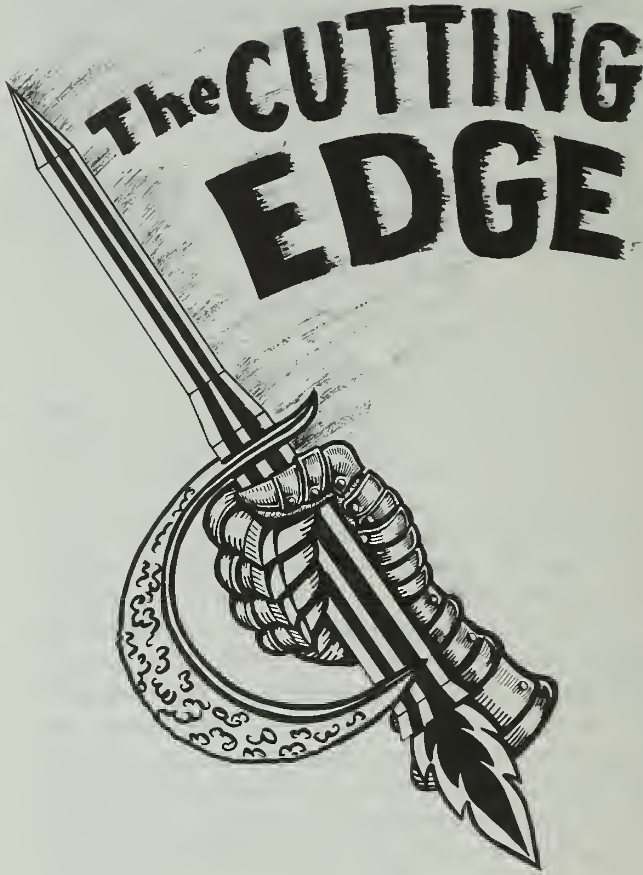
Once the objectives and plan have been established, the next move is to implement your ideas. The best plan in the world is totally useless if it is not acted upon. Do not procrastinate! There are only a few reasons good enough to deviate from a sound plan. In the event of an unplanned deviation, time must be incorporated into the plan to allow for adjustments.

Finally, I feel that the most important ingredient in achieving the H.Q. is crew awareness. Each crewmember must be attuned to the others. This is necessary in order to recognize any changes in attitude, actions, and yes, even enthusiasm, on the part of the rest of the team. Without a doubt, the concepts of a team effort cannot be overstressed. The actions or lack of actions on the part of any crewmember affect the entire crew and its performance.

Although a positive attitude, conscientious study, organized preparation and crew awareness won't guarantee an outstanding rating from the STAN/EVAL folks, they definitely will improve your chances to obtain that ever elusive Highly Qualified rating.

Missile Maintenance Airman of the Month

Sgt Michael C. Powell, 91st SMW, Quality Control Division, Minot AFB, is the SAC ICBM Maintenance Airman of the month. Sgt Powell has insured compliance with the Maintenance Standardization and Evaluation Program for 45 technicians. This entailed monthly, quarterly and annual inspections and evaluations requirements. His efforts were readily evidenced by the high ratings received by the MMT section during all higher headquarters and local inspections. Included are an excellent rating from the SAC Inspector General in March 1981, an excellent rating during their annual activity inspection and a satisfactory rating during the 3901st SMES evaluation in July 1981. He also monitors and evaluates the Special Purpose Vehicle Operator program. His efforts have contributed to this wing's record of no major special purpose vehicle accidents in over three years. He continuously strives to improve maintenance by submitting technical order improvements, including a change in the diagrams for the squibb assemblies for the guidance and control rotary actuator squibb, G&C umbilical head squibb and a change which requires the checking of the launcher closure ballistic gas generator cartridge collars for tightness during maintenance. His BGG improvement report has resulted in a HQ SAC directed message for all Minuteman missile wings to perform a one-time inspection of 10 launch facility BGG collars. Sgt Powell is a dedicated noncommissioned officer and a valuable asset to the SAC ICBM maintenance effort and the United States Air Force.



The Minuteman Secure Code System

Capt James W. Evans
3901 SMES, Vandenberg AFB

The mission of the Strategic Air Command requires a secure and positive link between the National Command Authority and SAC's nuclear force. For the Minuteman intercontinental ballistic missile system, this requirement is satisfied by means of a secure code system. This system extends the positive control link from the President through the missile crews located at the launch control centers to each of our unmanned Minuteman launch facilities. While the methods, hardware and codes by which the system is implemented are complex, its objective is a simple one: prevent an unauthorized launch of any of our Minuteman ICBMs.

Code controllers assigned to the strategic missile wings are responsible for the production of all launch control center and launch facility secure code system products, and they are trained in the operation of the code inserter-verifier (CIV) subsystem and other peripheral equipment. It is the CIV which is used to reformat master code materials, provided by the National Security Agency (NSA) and HQ SAC, into the tapes and devices used to secure the Minuteman weapon system. The items produced include launch control panels, enable panels, weapon system controller memory drawers and memory controller group magnetic drum units as well as various magnetic cartridges. Code controllers are also involved in execution plan loading and SIOP magnetic tape generation.

The majority of these components require what is termed as "split handling." The split handling concept was developed in response to a National Security Agency requirement for the protection of missile launch and enable information. Whenever possible, the complete launch code and enable code are split into complementary halves. One half is assigned to a control group "A" and the other half to control group "B." Coded material is then handled only by personnel who are assigned permanently to the same control group as that of the material. In addition, complementary group "A" and "B" materials must be physically separated when placed in storage, and they must be secured by a double system of locks — furthermore, no single person may have knowledge of all the required combinations! The basic purpose of these control and security measures is to insure a lone person is never permitted access to critical launch information and to prevent **any** single individual from knowing the complete launch or enable codes.

To further enhance the security of critical launch information, a modification has been initiated to convert from punched mylar tape to magnetic tape cartridges as the medium for storing codes data. Previously, the possibility existed for an individual to discern coding information by viewing the punched data on the mylar tape. This possibility is eliminated by use of magnetic tape cartridges. In addition, these magnetic tape cartridges have significantly decreased the time it actually takes to load information into a missile's computer. The time saved in computer loading varies by weapon system and the task being performed. However, typical time-line savings with the magnetic medium are 15-30 minutes and contribute to a significant reduction in sortie off-alert time.

Eleven officers and six NCOs perform the operational coding requirements at each of the six Minuteman wings. It's their responsibility to provide secure codes for 1000 Minuteman missiles. Additional positions at the National Security Agency, HQ SAC, 8th Air Force and 15th Air Force provide selected code controllers an excellent opportunity for career advancement in a critical and demanding field.

The future for personnel in the secure code system is promising. Controllers are becoming secure data managers as well as system operators who perform on-line troubleshooting of CIV computer malfunctions. These personnel will have a more visible impact on alert force management in the future, and as a result will require training and experience in computer system operation. If the idea of working with a rapidly developing computer oriented system appeals to you; if you feel you might enjoy interaction with DOD contractors; or if the challenge of developing technical data for new systems might be your forte, then consider a staff position with your unit's codes division.

Safety Man of the Month

TSgt Troy L. Wilson, Jr., 9th FMS, Beale AFB, is the SAC Safety Man of the Month. His indepth knowledge of safety directives and motivation to enforce these directives provides his unit with an effective and comprehensive accident prevention program. During TSgt Wilson's tenure as Unit Safety NCO no AFMV or SPV mishaps were experienced. His attention to detail and ability to motivate others upgraded the unit's safety program to a high level. TSgt Wilsons's concern for the well being of everyone is evidenced by his comprehensive safety inspection program. His knowledge of the maintenance career field enables him to quickly identify and correct hazards during daily walk-thru inspections. He also conducts safety briefings prior to every holiday and as a direct result this unit has not incurred any mishaps during these high mishap potential periods. Further, seat belt usage has risen 25% above previous use percentages. TSgt Wilson is a dedicated, knowledgeable and sincerely motivated professional NCO, and a definite asset to the aircraft maintenance field, SAC and the United States Air Force.

CFIC CORNER

Don't Let Your Legs Fail You

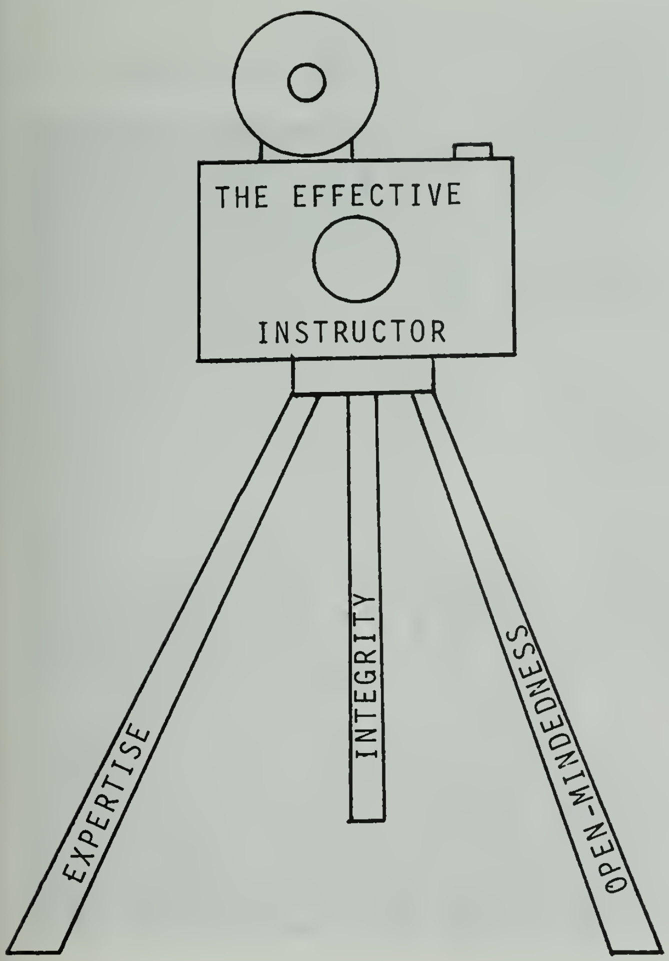
Captain Allen W. Price
Central Flight Instructor Course
Castle AFB

Imagine that you're a photographer and have painstakingly set up your camera and tripod to take that perfect picture only to watch the camera be smashed as one of the tripod legs fail. Your camera which was once an effective, efficient, complex piece of equipment, capable of creating masterpieces, is now useless. The simple tripod was designed to be a very stable platform, and it was as long as it had three functioning support legs. However, the failure of the simple caused the demise of the complex.

I like to think of us, the instructors, as delicate instruments, capable of producing masterpieces. The masterpieces in our business are crew members capable of executing their assigned missions in the most efficient, effective manner. However, this delicate instrument, like the camera, must have a sound foundation, or it, too, will be undermined and topple, becoming little more than fractured pieces. Each leg of the tripod that supports this delicate instrument is built with one of what I think are the hallmarks of the effective instructor — expertise, openmindedness, and integrity.

EXPERTISE: An expert is someone who possesses specialized, detailed knowledge in a particular field. It probably appears obvious that we have to be an expert and thoroughly "know our stuff" before we can impart this knowledge to someone else. But in our present day and age it is not easy. Technology advances so rapidly that by the time we feel comfortable with a new piece of equipment, that particular equipment is obsolete and replaced with a new system. We have to forget the old and restart the learning process for the new. Current examples of such changes are the Offensive Avionic System, the Power Management System, the AFSATCOM, the Inertial Navigation System and the Doppler Navigation System. Keeping up is difficult, but keep up we must or the "expertise" leg will collapse.

The problems of an expert only begin with trying to stay current. There is a second aspect to being an expert. An expert may be asked to interpret or give an opinion regarding this specialized, detailed



knowledge that he possesses. This often happens when we, the instructors, must rearrange or reduce the information to a form that the student can use. It is not good enough to just parrot what the book says; we must also be able to tell what it means in regard to the student's inquiry. Sometimes a simple "yes" or "no" is all the student wants to know. At other times his thirst for knowledge might require a detailed explanation, but he needs the information in a format different than what the T.O. or regulation presented. These interpretations and opinions should be effortless, for they are an integral part of being an expert. However, before we can render credible interpretations and opinions we must, above all, "know our stuff."

OPEN-MINDEDNESS: Yes, we are the experts. After all, that is why we were chosen to become instructors — right? Of course that's right. But we should realize that other people, be they fellow instructors, students or staff, have their own arguments and ideas. An effective instructor can not afford to prejudge these opinions, arguments and ideas. He must listen — for he too may learn. This is especially true with the younger crew members just arriving at the operational unit. They have been devoting their time to basics while we have been trying to keep up with the daily operation of our unit's mission and sometimes loose sight of the basics. Some new crew members come to our units with advanced, technical information that we just haven't had time or the resources to ferret out yet. (This is especially true with the rapidly changing nature of ECM). Let's listen to our students — we may be surprised! They are not always the "student". A good instructor should listen as much as he talks. There just might be a better way to do something.

INTEGRITY: We are going to find times when we just don't know the answer even though we are the experts. It is no great sin to not know the answer. But, it is an unforgivable sin to try to "snow" the student with erroneous information (or, as I have seen in some cases, "snow" them with pure B.S.). When our student finds out the truth (and he will find out), do you think he will accept the "straight skinny" from us the next time? I doubt it. If we don't know, say so. Now, however, we have an obligation to find the answer, in a timely manner, and get it back to him. Follow it up. If we don't, he won't approach us the next time with his questions. How effective are we going to be if no one feels they can approach us with their questions, doubts or problems?

There are going to be times when we make an honest mistake and say something that is in fact wrong. The sin is letting the student continue to believe it as truth after we have realized it to be false — but this happens. The instructor fears admitting being wrong. He fears a credibility gap; after all, he is the "expert". This arrogant ego trip can be the destruction of an entire training program. We must humble ourselves and admit mistakes. Integrity is what keeps our effectiveness as an instructor, and perhaps our entire training program, whole and undivided.

Just like the tripod, we must have ***all*** three legs, expertise, open-mindedness and integrity, or our effectiveness will topple. If we ignore just one leg we will find that, just as with the smashed camera, no masterpieces will be created. The unit's mission will suffer.

At CFIC we often ask, "Where does it say that?" So — yes, you may ask that question. My answer is "It doesn't". It's my opinion. (Remember, giving opinion is part of expertise and that does have a reference, Merriam Webster). Think about it. Give it a try and remember — Don't Let Your Legs Fail You!

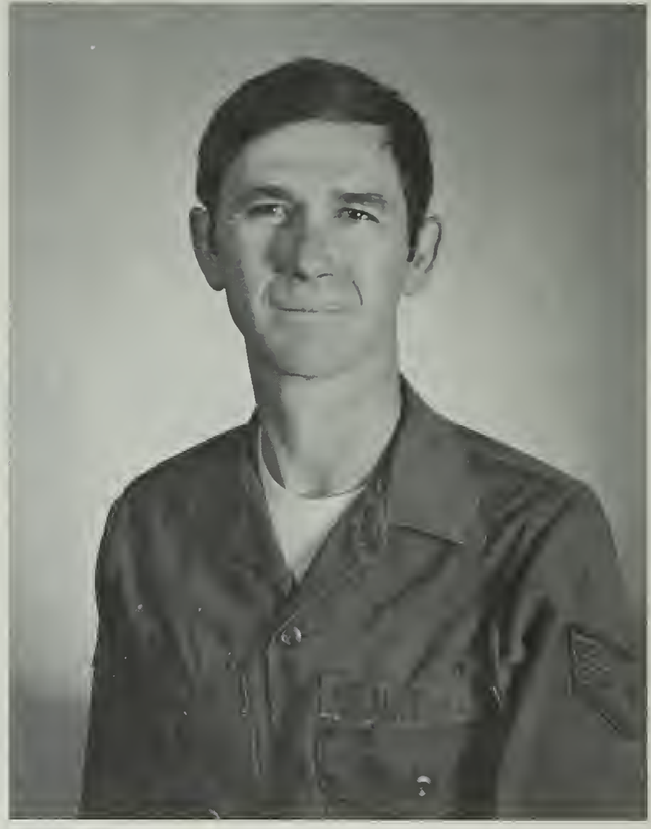
AFIT
Strategic and Tactical Sciences Program

This note is directed toward officers who are either on crew or who have crew experience and are searching for a challenging higher headquarters assignment. If you have a technical background and an outstanding performance record consider the AFIT Strategic and Tactical Sciences (S and TS) program. Graduates of this 18 month school at Wright Patterson AFB can expect MAJCOM or HQ USAF directed duty assignments. Especially designed to equip officers having strategic operations expertise with a quantitative and operations research background, the AFIT S and TS Program educates Air Force officers in the areas of strategic and tactical planning. Specifically, the program prepares you for follow-on assignments involving selection, planning, and optimization of the deployment and use of conventional and nuclear weapon systems. The main emphases of the program are on quantitative scientific approaches to strategic and operations planning. In September of each year, 15 to 25 Air Force officers from a variety of commands enter the program and begin courses which include probability and statistics; operations research; nuclear and conventional weaponry; electronic warfare; and command, control and communications.

Organizational positions suitable for graduates are those requiring both operational experience and quantitative analysis capabilities. As an ex-SAC crewmember with an M.S. in Operations Research, you can expect to be monitored closely for assignment to one of several positions at the Offutt Complex (HQ SAC/JSTPS). Since the inception of the S and TS program in 1977, a total of 37 positions within nine Offutt Complex organizations have been validated as meeting the requirements for S and TS graduates. These positions are varied and include Force Planning, Targeting Analysis, Aircraft and Missile Tactics, Computer Applications and Studies/Analysis.

The AFIT S and TS Program is a challenging educational experience followed by a rewarding MAJCOM or higher assignment. If you have questions or want more information on the program contact Captain Joe Mulcahy, HQ SAC point of contact, SACOS/XOBM, at AUTOVON 271-4474/4784.

Crew Chief Of The Month



SSgt Dennis P. Kester, 92 OMS, Fairchild AFB, a KC-135 Crew Chief, was supervising a truck to aircraft single point refueling when he noticed smoke coming from underneath the truck engine. He ordered shut-down but, although the truck driver pulled the emergency cutoff handle on the truck, the truck engine continued to run. As flames leaped out from under the engine, the driver grabbed one of the truck fire extinguishers and Sergeant Kester brought over a 50-pound CO_2 fire bottle stationed near the truck. The driver's extinguisher did not work properly, but Sergeant Kester was able to put the fire out. Sergeant Kester and the truck driver then opened the hood and disconnected the battery cables. This stopped the engine from running and the situation was completely in hand. Sergeant Kester's response with the fire bottle prevented extensive damage to the fuel truck and averted a potential loss of aircraft and life. His reaction to the situation was an outstanding example of alert thinking and decisive action under pressure.

HEADS UP

On 30 Jul 1981, Captain Coyle's heads up flying saved a B-52 from probable disaster when a spoiler group jammed full up on a touch and go landing. The mission was routine until flaps were lowered for transition training and Captain Coyle noted a slight tendency to roll right on the approach. This was compensated for with left spoiler, and touch and go procedures were normal until the airbrakes were lowered to zero. Then the aircraft began to veer right despite full left yoke and rudder inputs. Capt Coyle could not stop the aircraft from drifting to the right with full left spoiler and rudder, so he used full power on right outboard engines 7 and 8. This quick thinking leveled the wings and stopped the drift just as the aircraft departed the runway surface. By keeping the two right outboard engines at full power Capt Coyle was able to keep wings level and accelerate to flying speed though the aircraft traveled 155 feet through the grass before flying at 110 KTS. He then held the aircraft in ground effect until best flare speed and climbed to pattern altitude. On downwind he checked the aircraft controllability, extended his airbrakes and performed a normal landing. An aircraft engineer confirmed that a combination of a slight fuel imbalance and the spoiler problem turned the aircraft off the runway without immediate full spoiler correction. Captain Coyle's quick reaction, full understanding of his aircraft and superb flying skill prevented the loss of a valuable SAC crew and aircraft.

WING CRACK . . .

Continued from Page 13

KIAS, and maintaining altitude requires optimum techniques. We executed a descent to FL 240 to make aircraft performance and control much easier. By this time we were within UHF range of our command post, so we initiated a conference with them to allow the lead time necessary to get clearance for the fuel dumping, to acquaint them with our problem, and voice our intentions. We flew to the fuel dumping area and continued the computations and plans for our landing. An IP was called to the command post and we cross checked our steps and landing data with him.

We entered the fuel dumping area and were greeted with turbulence, clouds, and static discharge of electricity (St. Elmos Fire), none of which we wanted or needed at this time. We received clearance to adjust our gross weight, descended to FL 220, which was twenty thousand feet AGL, and received vectors out of the turbulence into a clear area to begin the fuel dumping. Once dumping was initiated, one pump was used on the left system due to the loss of the number 2 engine. About half way through the dumping procedure, the number 4 hydraulic pump inop light illuminated momentarily and system pressure dropped to preload on the right system. All A/R pumps were turned off and system pressure returned to normal. We then restarted the dumping with one pump from each hydraulic system and were able to complete the fifty thousand pound adjustment, giving us a landing gross weight of 150,000 pounds.

During the dumping sequence, the navigator was logging all of the required information for the command post report required for in-flight fuel jettison. Once complete with the fuel jettison, we worked the descent checklist and began our descent to an expected ILS approach. During descent heavy rain and light to moderate icing was encountered. The suggested clean descent was complicated by the icing and the requirement for increased engine rpm for anti-ice protection. We required a box pattern for descent and slowed the aircraft for 30° flap configuration once we entered VMC. Just prior to reaching the glide path, the gear was lowered and a 3 engine 30° flaps, night landing was made. After landing, the fuel panel showed an eight thousand pound lateral imbalance between number two and three tanks.

Fuel was maintained in the reserve fuel tanks throughout flight to add stability to the wings as described in the tech order. The winds were of very little consequence in the landing. They were 150/08, about a seven knot left cross wind. Speed brakes were used during the landing ground roll to aid in slowing the aircraft. We cleared the runway and shutdown the engines as fuel was still spilling from the underwing surface. At this point the emergency was terminated and although I had not prebriefed this problem prior to flight, I was glad that I had seen a similar problem in the simulator prior to my actual experience inflight. One thing that kept me guessing for quite a while was the question of why didn't the crack detection system illuminate and warn me of this crack in my wing. As I later learned, the system does not have sensors in the wet areas of the wing. The sensors are only found in the dry bay areas of the center wink tank, where a crack can not be detected by the loss of fuel. The system worked as advertised, but by not knowing the mechanics of this relatively new system, I felt that it had failed when it did not illuminate, confirming the cracked wing surface.

What was learned by the crew? Well I learned that crew coordination, strict discipline to tech order procedures, and good judgement allowed me to write this article rather than become a memory or a war story at the bar. We learned exactly how the crack detection system works and what its limitations are.

The after landing inspection of the aircraft revealed a 20 inch crack on the lower wing surface of the left wing. The skin was cracked along wing station 313, between stringers 8 and 11. Stringers 9 and 10 were also cracked. The aircraft had not been reskinned on the lower wing surfaces. The aircraft had, at the time of the crack, 9388.5 airframe hours.

A special plate was made to restress the wing surface and once the required study was made on stresses and fuel loading, I was selected to fly the aircraft to Boeing Military Aircraft Corporation, Wichita, Ks., for depot repair and wing resurfacing. Coordination was made with the Boeing engineers and special fuel loading was accomplished leaving the number 2 tank empty. A specific fuel burn sequence was planned and with a "one time flight clearance", we launched and made a successful trip to the depot.

The most overriding thing that I learned from these two flights and the coordination with the Boeing engineers is that we can have confidence in the airframe structure and engineering that has gone, and continues to go, into the KC-135. "Big Silver" is an excellent airplane and is very foregiving if we just "Stop", "Think", "Collect our Wits," and above all "Fly the Airplane".

FLY THE . . . .

Continued from Page 9

While everyone's attention was focused on the heading problem and then the airspeed problem, the aircraft descended from TA altitude to about 100 feet above the most effective anti-aircraft weapon on earth . . . the ground. FLY THE AIRCRAFT.

Incidently, the airspeed was back near the planned TAS by then, and the climb to TA altitude was uneventful, and the bombs were camera scored as valid, too.

The things I learned from this experience and want to share with the rest of the flight crews who read this article are these. First, NEVER become so wrapped up in a malfunction or any problem that you forget to FLY THE AIRCRAFT. Second, no matter how much experience you have, no matter how many times you have accomplished what you are doing in flight, don't think you can't be the next statistic. It can happen, and it can happen fast. So FLY THE AIRCRAFT.

On a B52 there are six crewmembers. Of these, four have flight instruments in front of them at their crew stations. How many people fly the aircraft? Two, you say? Well, I would say that anyone who has any indication of how the flying of the aircraft is progressing, is flying the aircraft. Perhaps your hands aren't on the controls, perhaps you can't even see the controls, but if you can talk to whoever does have them, you are flying the aircraft. A B52 navigator once described his job as being a vocal altimeter. That is part of his job, but with displays of indicated airspeed and the radar altimeter reading on his EVS monitor he and the RN and anyone else who can see these monitors are also flying the aircraft. FLY THE AIRCRAFT.

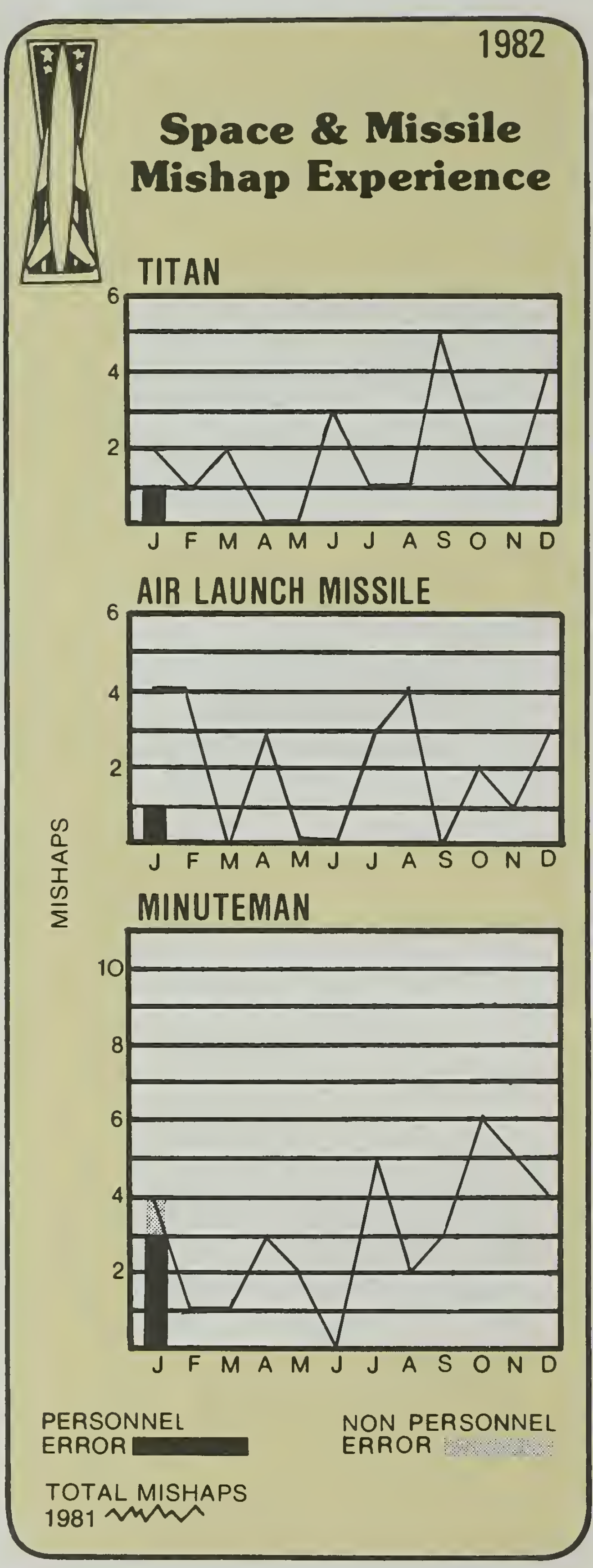
At CFIC at Castle AFB, California there is a sign hanging somewhere in the hall that has the first commandment of airmanship on it . . . FLY THE AIRCRAFT.

Why did this crew get out of this situation? Because someone remembered to fly the aircraft before it was too late.

So if your aircraft has two crewmembers, or four, or six, or more, remember you are flying that aircraft, too. Your flight control input over the interphone to the pilot may just prevent another statistic, your statistic. We have just recently lost one aircraft in a situation so similar to mine at the beginning of this article, it scares me, and we have come very close to losing another since then, let's not lose any more.

Remember you are flying that aircraft as much as the guy with his hands on the controls, so FLY THE AIRCRAFT . . . FLY THE AIRCRAFT . . . FLY THE AIRCRAFT . . .

Space & Missile Mishap Experience



USAF FLYING SAFETY WEEK
MAY 17-21

USAF has designated the week of 17-21 May, to be flying safety week. Information regarding this program can currently be found in the January 82 Safety Journal and the February issue of Flying Safety Magazine. The intent of the program is to involve all commands and all units in a comprehensive look at flying and support activities in order to find innovative ways to prevent mishaps. This review is not to fall solely on the safety office, but will encompass all organizations and personnel directly involved with flying operations and maintenance activity.

This special emphasis program came from two incentives:

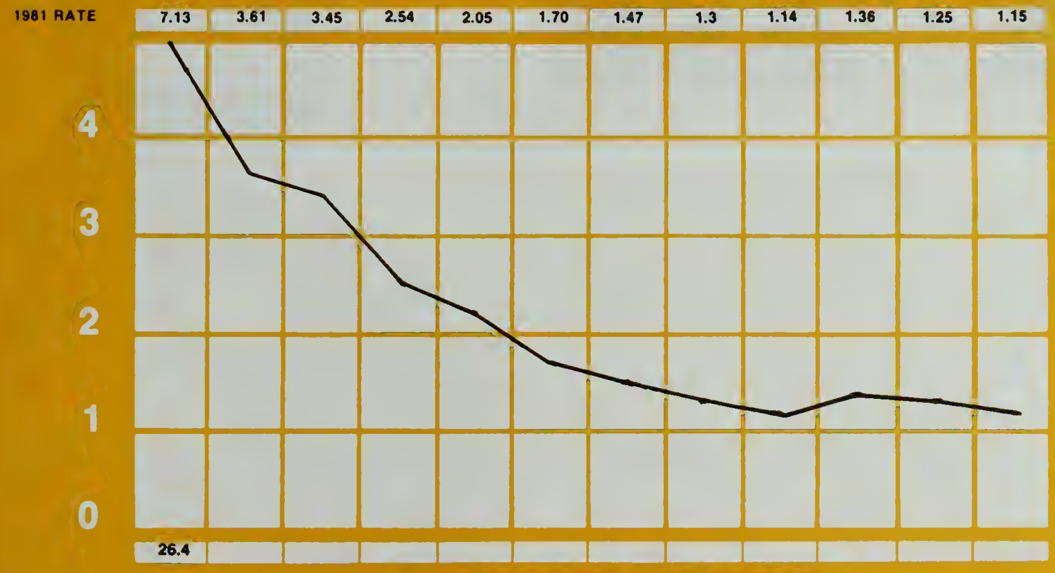
- A recommendation by the System of Cooperation Among the American Air Forces (SICOFAA) for each member nation to conduct a special emphasis week for flying safety;
- A letter from Deputy Secretary of Defense, Frank C. Carlucci, to all military departments expressing concern over the rising cost of aircraft accidents. It was Secretary Carlucci's letter which led to BROAD LOOK, the seven phases of which are covered in Flying Safety's February article on Safety Week. The January USAF Safety Journal article provide units information on how to get started on their own BROAD LOOK program.

How each unit conducts their review and what other activities will be involved are primarily at the discretion of the unit. In order to provide further guidance, Hq SAC will be issuing a brochure (early April). This brochure along with present and future articles in safety publications will provide the information needed to develop an effective unit campaign.

Flying safety continues to receive special attention at the highest levels in the Department of Defense. To help reduce our mishap rate and potential, you are being afforded the opportunity to make an appreciable contribution to the total mishap prevention effort. Maximum participation in and support of flying safety week will be well worth your time and effort.

1982 Flying Safety Rate

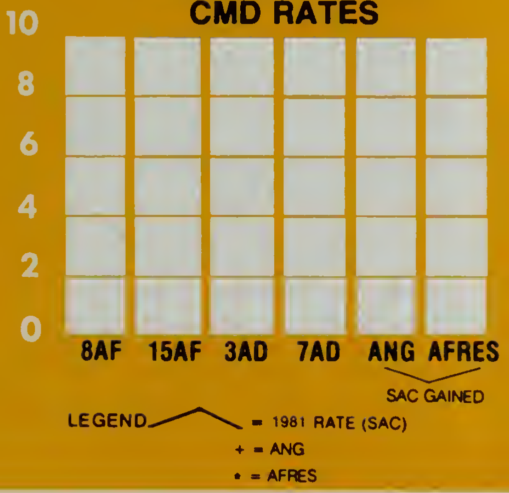
SAC CLASS A MISHAP RATE (PER 100,000 FLYING HRS)



CUMULATIVE FLYING TIME (1,000 HRS)

MISHAPS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1981	2	0	1	0	0	0	0	0	0	1	0	0
1982	0											

1982 SUBORDINATE CMD RATES



MISHAP STATUS

940TH . . .
Continued from Page 5

This past year, the 940th Weapons System Security personnel were especially welcome. Because of the terrorist bombings on USAFE bases in Germany, security at every USAFE installation was tightened. RAF Mildenhall was no exception, thanks in part to 17 extra men from the 940th.

Because reserve units don't have access to all their members full time, scheduling, planning and training have to be coordinated for a maximum use of every flying and maintenance hour. Goals have to be set and met. A case in point — SAC's fuel conservation goal per tanker hour in 1980 was 14,035 pounds. Through a combination of good flying and good maintenance, the 940th aircraft averaged 11,795 pounds per hour. In 1981, SAC set a new goal and the 940th again bettered the goal by averaging 11,340 pounds per hour.

To strive to do better than is asked: It's part of the experience, stability, pride and cooperation at work in the 940th Air Refueling Group (Reserve).

THE B-58 HUSTLER ASSOCIATION —
BI-ANNUAL REUNION
FT. WORTH, TX.
JUNE 18, 19, 20, 1982
GREEN OAKS INN

CONTACT:
ED YINGST 817-478-7803
JOE ROGERS 817-249-5558
BILL McGLOHEN 817-732-4330

Aircraft Maintenance Airman of the Month

SSgt Jerry D. Collins, 22d BMW, March AFB, is SAC Aircraft Maintenance Airman of the Month. His selection is based on sustained superior performance as the crew chief of the squadron's Munitions Loading Standardization Crew. Under Sgt Collin's leadership, his crew has excelled throughout this year in the accomplishment of their duties which contributed significantly to the success of the wing's mission. For the second straight year, he was the wing's Munitions Maintenance Team Crew Chief for the annual Giant Sword Munitions Loading Competition held at Ellsworth AFB. His crew performed a flawless external load of nine M-117 bombs and earned them the Best Conventional Load trophy. Their loading task was also performed in such a professional manner that a film of the load will be used as a training aid at the Lowry AFB Technical Training Center Munitions Course. Sgt Collins is truly a dedicated noncommissioned officer and is a valuable asset to the SAC maintenance effort and to the total mission of the United States Air Force.

SAC
SAFETY SCREEN

307 AREFG, Travis Crew S-103: IP Maj Dave Mickle, CP Capt Dave Diller, IN Capt Cliff McCullough, IBO SSgt John Peterson

307 AREFG, Travis Crew E-132: P Capt Tom Fronk, CP 1Lt Jim Leli, N 2Lt Buster Hayman, IBO SSgt Roger Page

126 AREFW, Chicago O'Hare (ILANG): P Maj James A Ladd, CP Capt John P Durbin, N 2Lt Richard W Gungel, BO MSgt Robert G Thibault

126 AREFW, Chicago O'Hare (ILANG): P Maj Kenneth N Eldrup, CP Capt Gerald R Bockenek, N Lt Col Maurice F Desormeaux, BO Sgt Joseph G Shell

43 AREFS, Fairchild Crew S-110: P Maj Kenneth B Macaluso, CP Capt Ronald C Sharpe, N Capt George E Lee, BO TSgt Daniel D Deloy

9 AREFS, Beale Crew E-165: P Capt Michael E Humphreys, CP 1Lt James D Hagedorn, N Capt Claude E Watters III, BO Sgt Arthur L Hatter Jr

349 AREFS, Beale Crew S-102: P Capt George W Dorris, CP Capt Gary L Hileman, N 1Lt Thomas A Prior, BO MSgt James T Welby

19 BMW, Robins Crew E-21: FP Capt Ronald L Cavendish, CP 1Lt David B Fallon, NB Capt Ronald D Nass, NN 1Lt James D Gray, NE 2Lt Michael J Connor, AG SSgt Charles F Levelle Jr

19 BMW, Robins Crew E-110: FP Capt John N Kearns, CP 1Lt Mitchell C Davitte Jr, IN Capt Rembert L Harmon, BO TSgt Gary L Ranney

97 BMW, Blytheville Crew S-01: P Capt Thomas W Ellers, CP 1Lt William C Hoferer, RN Capt Dennis Hutchings, NN 1Lt John R Durrer, EW Capt Fredrick R Moore, AG TSgt Lee M Cothran

97 BMW, Blytheville Crew E-13: P Capt James R Greathouse, CP Capt Earl L Lund III, RN Capt David J Grenda, NN 1Lt Luis R Ballester, EW 1Lt James E Solinski, AG A1C Robert L Wiggs

97 BMW, Blytheville Crew E-112: P Lt Col William T Hanson, CP 1Lt Henry M Wade, NN Capt Charles A Conaway, BO SSgt Michael G Smith

97 BMW, Blytheville Crew S-01: P Capt Thomas W Ellers, CP 1Lt William C Wilson, NN Capt Charles McPherson, BO A1C James M Boozer Jr

41 AREFS, Griffiss Crew E-113: P Capt Dean E Rice, CP Capt Peter P Kockenmeister, N Lt John P Neblett, BO Sgt Randy S Seip

69 BMS, Loring Crew R-27: P Capt Robert T Kulakowski, CP Capt Albert Vacca Jr, RN Capt Paul W Curtis, N 1Lt Antonio Mendibur, EW Capt John L MacDonnell, G SrA Charles C Shoaff Jr

407 AREFS, Loring Crew R-183: P Capt Richard A Steele, CP Capt Joseph A Delia, N 1Lt Thomas C Phillips, BO SrA John M Polanshek

42 AREFS, Loring Crew R-113: P Capt Robert J Goodman, CP Capt William C Seiffert, N 1Lt Karol R Wojcikowski, BO SSgt Douglas D Simmons

46 AREFS, K I Sawyer Crew R-108: P Capt John Stevens Jr, CP 1Lt Richard Newman, N Capt Everett C DeWolfe, BO SSgt Charles R Meyer

46 AREFS, K I Sawyer Crew E-119: P Capt Paul L Whitmore, CP 1Lt Jeffery Robertson, N Capt Michael R Lipcsak, BO SSgt Steven K Langner

644 BMS, K I Sawyer Crew R-32: P Maj Jackie L Thomas, CP Lt David G Gibbs, NB Capt Kim C Barnett, NN Lt Douglas L Good, NE Lt William K Lodholz, AG SSgt Kent W Wales

644 BMS, K I Sawyer Crew E-35: P Capt Stan G Weir, CP Lt Frederick R Bates II, NB Capt Forrest P Smith, NN Lt Lloyd B Helton Jr, NE Lt John J Morgan, AG SSgt Jeffrey S Fannin

308 SMW, Little Rock Crew R-040: MCCC Capt Curtis L Parker, DMCCC 2Lt Rodney K Robinson, MSAT SrA Scott F Bashaw, MFT A1C Roy E Dean

351 SMW, Whiteman Crew E-074: MCCC 1Lt William J Kalaskie, DMCCC 2Lt Mark A Eunson

19 BMW, Robins Crew S-104: P Capt Joseph Wisniewski, CP 1Lt James J Mumby Jr, IN Capt Mark A Miller, BO TSgt Eugene J Cowles Jr

The SAC Safety Screen is an honor roll of SAC's most professional crews. To gain listing on the Screen, crew members must be nominated by their unit commanders and meet high selection criteria of experience in their aircraft or missile system .

UNIVERSITY OF FLORIDA
3 1262 09683 6365

HALL OF FAME

FLARE

TACTICAL FLYING

OVER TWENTY-SIX YEARS

170 AREFG, McGuire (NJANG)	Feb '56

OVER TWENTY-THREE YEARS

171 AREFW, Greater Pittsburgh (PAANG)	Mar '58
157 AREFG, Pease (NHANG)	Jun '58

OVER TWENTY-TWO YEARS

940 AREFG, Mather (USAFR)	May '59
307 AREFG, Travis	Sept '59

OVER TWENTY-ONE YEARS

151 AREFG, Salt Lake City (UTANG)	Feb '61

OVER TWENTY YEARS

161 AREFG, Sky Harbor (AZANG)	Apr '61
126 AREFW, Chicago O'Hare (ILANG)	Apr '61
134 AREFG, McGhee Tyson (TNANG)	Aug '61
11 SG, Fairford	Feb '62

OVER NINETEEN YEARS

340 AREFG, Altus	Jun '62
96 BMW, Dyess	Aug '62

OVER EIGHTEEN YEARS

19 BMW, Robins	Aug '63

OVER SEVENTEEN YEARS

160 AREFG, Rickenbacker (OHANG)	Dec '64

OVER SIXTEEN YEARS

320 BMW, Mather	Jul '65

OVER FIFTEEN YEARS

452 AREFW, March (USAFR)	Sep '66
92 BMW, Fairchild	Feb '67

OVER FOURTEEN YEARS

55 SRW, Offutt	Jul '67
2 BMW, Barksdale	Aug '67

OVER THIRTEEN YEARS

5 BMW, Minot	Feb '69

OVER TWELVE YEARS

42 BMW, Loring	Sep '69
141 AREFW, Fairchild (WAANG)	Oct '69

OVER ELEVEN YEARS

28 BMW, Ellsworth	May '70

OVER NINE YEARS

101 AREFW, Bangor (MEANG)	Mar '72
306 SW, Mildenhall	Apr '72
416 BMW, Griffiss	May '72
305 AREFW, Grissom	Aug '72

OVER EIGHT YEARS

379 BMW, Wurtsmith	Apr '73
931 AREFG, Grissom (USAFR)	Feb '74

OVER SEVEN YEARS

384 AREFW, McConnell	Mar '74
189 AREFG, Little Rock (ARANG)	May '74
43 SW, Andersen	Dec '74

OVER SIX YEARS

68 BMW, Seymour Johnson	Sep '75

OVER FOUR YEARS

410 BMW, K.I. Sawyer	Apr '77
190 AREFG Forbes (KSANG)	Apr '77
128 AREFG Milwaukee (WIANG)	Jul '77

ICBM

OVER SEVENTEEN YEARS

1 STRAD, Vandenberg	Sep '64

OVER ELEVEN YEARS

341 SMW, Malmstrom	Apr '70

OVER EIGHT YEARS

390 SMW, Davis-Monthan	Jul '73

OVER SEVEN YEARS

351 SMW, Whiteman	Oct '74
91 SMW, Minot	Nov '74

OVER SIX YEARS

321 SMW, Grand Forks	Feb '76

To gain listing in the Hall of Fame, a SAC or ARF unit must be Class A mishap-free for 48 months.

*U.S. Government Printing Office
1981 — 765-047/11